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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/518,115	07/19/2005	Tsuyoshi Koike	TIC-0078	3250
23377	7590	07/31/2006	EXAMINER	
WOODCOCK WASHBURN LLP ONE LIBERTY PLACE, 46TH FLOOR 1650 MARKET STREET PHILADELPHIA, PA 19103			CHEN, JUNPENG	
			ART UNIT	PAPER NUMBER
			2631	

DATE MAILED: 07/31/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/518,115

Applicant(s)

KOIKE ET AL.

Examiner

Junpeng Chen

Art Unit

2631

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on July 19, 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 December 2004 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date September 08, 2005.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 371 and 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Information Disclosure Statement

2. The information disclosure statement submitted on September 08, 2005 has been considered by the Examiner and made of record in the application file.

Objection - Specification

3. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

The following title is suggested: Low frequency attenuation circuit with adjustable resistance inside an FM/AM selectable radio receiver.

Objection - Drawing

4. The disclosure is objected to because of the following informalities:

Each of Figure 1, Figure 2A, Figure 2B and Figure 2C, should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR

1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to

consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Ashida (JP 06-069822 A)** in view of **Arai (JP 09-064765 A)**.

Consider **claim 1**, Ashida discloses that a low frequency attenuation circuit which is used in an FM/AM radio receiver comprising:

a first switch for selecting an FM detected signal or an AM detected signal (read as switch 7 is selecting FM signal from detector 3 or AM signal from detector 6, Fig. 5, paragraph [0002]); a capacitor provided on the output side of said first switch (read as capacitor 33 on the output side of switch 7, Fig. 5, paragraph [0006]); a resistor provided on the output side of the first switch (read as an input stage is providing an input impedance, paragraph [0006]); and a high pass filter for AM detected signal (read as the high pass filter constituted by the capacitor 33 from the input impedance of an input stage, which is being used for both of the AM/FM detected signals, Fig 5, paragraph [0002]-[0006]);

However, Ashida fails to disclose that the input stage that provides impedance, which can be resistance as well-know in the art, is a plurality of resistors; and a second switch constituting a high-pass filter for the AM detected signal using a resistor selected from the plurality of resistors and the capacitor when the first switch selects the AM detected signal.

In related art, Arai discloses a wireless receiver that comprises a changeover machine 7 for making changeover selection of two or more resistors, Fig. 1, paragraph

Art Unit: 2631

[0015]. A person with ordinary skill in the art at the time the invention was made would be capable of using the changeover machine 7 taught by Arai to replace the input stage taught by Ashida to provide the resistance. Moreover, the changeover machine 7 by Arai comprises a second switch (read as terminals 7a, 7b and 7c, Fig. 1) to select different resistor. This second switch constituting a high-pass filter for the AM detected signal using a resistor selected from the plurality of resistors (read as 8a, 8b, 8c in Fig. 1) and the capacitor when the first switch selects the AM detected signal. The examiner interprets this as the changeover machine 7 taught by Arai can select any one resistor of the resistors to form the HPF with the capacitor 33 taught by Ashida for AM detected signal when switch 7 selected AM receiving section.

Therefore, it would have been obvious for a person with ordinary skill in the art at the time the invention was made to incorporate the teachings of Arai into the teachings of Ashida for the purpose of making the high pass filter formed by the capacitor 33 and the changeover machine 7 to have more than one cut-off frequency and thus being able to fine-tune the HPF.

Consider **claim 2, as applied to claim 1 above**, Ashida, as modified by Arai, further discloses a low frequency attenuation circuit, wherein the first switch, is formed in an integrated circuit (read as it is well know in the art that switch 7 can be integrated into a circuit in a receiver).

However, Ashida fails to disclose that the plurality of resistors and second switch are formed in an integrated circuit.

Nonetheless, Arai discloses the plurality of resistors (read as 8a, 8b, 8c in Fig. 1) and second switch (read as terminals 7a, 7b and 7c, Fig. 1). It is well known in the art that the plurality of resistors and second switches can be integrated into a circuit in a receiver.

Therefore, it would have been obvious for a person with ordinary skill in the art at the time the invention was made to incorporate the teachings of Arai into the teachings of Ashida and to have the switch 7, plurality of resistors and the second switch formed in an integrated circuit for the reason of saving space and thus saving cost.

Consider **claim 3, as applied to claim 1 above**, Ashida, as modified by Arai, further discloses a low frequency attenuation circuit comprising a high frequency attenuation circuit (read as low pass filter formed by capacitor 32 and the output impedance of amplifier 8, Fig. 5, paragraph [0006]) for attenuating high frequency component of a detected signal, wherein the second switch selects a resistor from the plurality of resistors based on the operation of said high frequency attenuation circuit (read as read as the high pass filter formed by capacitor 33 and input impedance of a input stage is constituted so that low pass speech frequency may not be declined, paragraph [0006]).

Consider **claim 4**, Ashida discloses that a low frequency attenuation circuit which is used in an FM/AM radio receiver comprising:

a first switch for selecting an FM detected signal or an AM detected signal (read as switch 7 is selecting FM signal from detector 3 or AM signal from detector 6, Fig. 5, paragraph [0002]); a capacitor provided on the output side of said first switch (read as

capacitor 33 on the output side of switch 7, Fig. 5, paragraph [0006]); resistor provided on the output side of the first switch (read as an input stage is providing an input impedance, paragraph [0006]); a control circuit for controlling (read as the selection-signal terminal that controls switches 7, paragraph [0002]) and a high pass filter for AM detected signal (read as the high pass filter constituted by the capacitor 33 from the input impedance of an input stage, which is being used for both of the AM/FM detected signals, Fig 5, paragraph [0002]-[0006]);

However, Ashida fails to disclose a control circuit for controlling the resistance of said resistor means; and the input stage that provides impedance, which can be resistance as well-know in the art, is a plurality of resistors; and a second switch constituting a high-pass filter for the AM detected signal using a resistor selected from the plurality of resistors and the capacitor when the first switch selects the AM detected signal, wherein the control circuit controls the resistance of said resistor means so that the cut-off frequency of the high-pass filter is a prescribed frequency which is determined based on the hearing sense of voice reproduced from the AM detected signal.

In related art, Arai discloses a wireless receiver that comprises a changeover machine 7 for making changeover selection of two or more resistors, Fig. 1, paragraph [0015]. A person with ordinary skill in the art at the time the invention was made would be capable of using the changeover machine 7 taught by Arai to replace the input stage taught by Ashida to provide the resistance. Moreover, the changeover machine 7 by Arai comprises a second switch (read as terminals 7a, 7b and 7c, Fig. 1) to select

different resistor. This second switch constituting a high-pass filter for the AM detected signal using a resistor selected from the plurality of resistors (read as 8a, 8b, 8c in Fig. 1) and the capacitor when the first switch selects the AM detected signal. The examiner interprets this as the changeover machine 7 taught by Arai can select any one resistor of the resistors to form the HPF with the capacitor 33 taught by Ashida for AM detected signal when switch 7 selected AM receiving section. In addition, a person with ordinary skill in the art at the time the invention was made would be capable of using the same selection-signal terminal taught by Ashida to control switch 7 and the changeover machine 7 to select different resistor.

Therefore, it would have been obvious for a person with ordinary skill in the art at the time the invention was made to incorporate the teachings of Arai into the teachings of Ashida for the purpose of making the high pass filter formed by the capacitor 33 and the changeover machine 7 to have more than one cut-off frequency and thus being able to fine-tune the HPF.

Consider **claim 5**, Ashida discloses an FM/AM radio receiver, comprising:

an FM detection circuit for generating an FM detected signal from a received wave (read as detector circuit 3 generates FM detected signal from the output of amplifying circuit 2, Fig. 5, paragraph [0002]);

an AM detection circuit for generating an AM detected signal from the received wave (read as detector circuit 6 generates AM detected signal from the output of amplifying circuit 5, Fig. 5, paragraph [0002]);

a first switch for selecting an FM detected signal or an AM detected signal (read as switch 7 is selecting FM signal from detector 3 or AM signal from detector 6, Fig. 5, paragraph [0002]);

a capacitor provided on the output side of said first switch (read as capacitor 33 on the output side of switch 7, Fig. 5, paragraph [0006]);

a resistor provided on the output side of the first switch (read as an input stage is providing an input impedance, paragraph [0006]); and

a high pass filter for AM detected signal (read as the high pass filter constituted by the capacitor 33 from the input impedance of an input stage, which is being used for both of the AM/FM detected signals, Fig 5, paragraph [0002]-[0006]);

However, Ashida fails to disclose that the input stage that provides impedance, which can be resistance as well-know in the art, is a plurality of resistors; and a second switch constituting a high-pass filter for the AM detected signal using a resistor selected from the plurality of resistors and the capacitor when the first switch selects the AM detected signal.

In related art, Arai discloses a wireless receiver that comprises a changeover machine 7 for making changeover selection of two or more resistors, Fig. 1, paragraph [0015]. A person with ordinary skill in the art at the time the invention was made would be capable of using the changeover machine 7 taught by Arai to replace the input stage taught by Ashida to provide the resistance. Moreover, the changeover machine 7 by Arai comprises a second switch (read as terminals 7a, 7b and 7c, Fig. 1) to select different resistor. This second switch constituting a high-pass filter for the AM detected

Art Unit: 2631

signal using a resistor selected from the plurality of resistors (read as 8a, 8b, 8c in Fig. 1) and the capacitor when the first switch selects the AM detected signal. The examiner interprets this as the changeover machine 7 taught by Arai can select any one resistor of the resistors to form the HPF with the capacitor 33 taught by Ashida for AM detected signal when switch 7 selected AM receiving section.

Therefore, it would have been obvious for a person with ordinary skill in the art at the time the invention was made to incorporate the teachings of Arai into the teachings of Ashida for the purpose of making the high pass filter formed by the capacitor 33 and the changeover machine 7 to have more than one cut-off frequency and thus being able to fine-tune the HPF.

Consider **claim 6**, Ashida discloses that a low frequency attenuation circuit which is used in an FM/AM radio receiver comprising:

a first switch for selecting an FM detected signal or an AM detected signal (read as switch 7 is selecting FM signal from detector 3 or AM signal from detector 6, Fig. 5, paragraph [0002]); a capacitor provided on the output side of said first switch (read as capacitor 33 on the output side of switch 7, Fig. 5, paragraph [0006]); a resistor provided on the output side of the first switch (read as an input stage is providing an input impedance, paragraph [0006]); and a high pass filter for AM detected signal (read as the high pass filter constituted by the capacitor 33 from the input impedance of an input stage, which is being used for both of the AM/FM detected signals, Fig 5, paragraph [0002]-[0006]);

However, Ashida fails to disclose that the input stage that provides impedance, which can be resistance as well-known in the art, is a plurality of resistors; and a second switch constituting a high-pass filter for the AM detected signal using a resistor selected from the plurality of resistors and the capacitor when the first switch selects the AM detected signal, and constituting a high-pass filter for the FM selected signal using a resistor selected from said plurality of resistors and said capacitor when said first switch selects the FM detected signal.

In related art, Arai discloses a wireless receiver that comprises a changeover machine 7 for making changeover selection of two or more resistors, Fig. 1, paragraph [0015]. A person with ordinary skill in the art at the time the invention was made would be capable of using the changeover machine 7 taught by Arai to replace the input stage taught by Ashida to provide the resistance. Moreover, the changeover machine 7 by Arai comprises a second switch (read as terminals 7a, 7b and 7c, Fig. 1) to select different resistor. This second switch constituting a high-pass filter for the FM or AM detected signal using a resistor selected from the plurality of resistors (read as 8a, 8b, 8c in Fig. 1) and the capacitor when the first switch selects the FM or AM detected signal. The examiner interprets this as the changeover machine 7 taught by Arai can select any one resistor of the resistors to form the HPF with the capacitor 33 taught by Ashida for FM or AM detected signal when switch 7 selected FM or AM receiving section.

Therefore, it would have been obvious for a person with ordinary skill in the art at the time the invention was made to incorporate the teachings of Arai into the teachings

Art Unit: 2631

of Ashida for the purpose of making the high pass filter formed by the capacitor 33 and the changeover machine 7 to have more than one cut-off frequency and thus being able to fine-tune the HPF.

Consider **claim 7, as applied to claim 6 above**, Ashida, as modified by Arai, further discloses a low frequency attenuation circuit comprising a high frequency attenuation circuit (read as low pass filter formed by capacitor 32 and the output impedance of amplifier 8, Fig. 5, paragraph [0006]) for attenuating high frequency component of a detected signal, wherein the second switch selects a resistor from the plurality of resistors based on the operation of said high frequency attenuation circuit (read as read as the high pass filter formed by capacitor 33 and input impedance of a input stage is constituted so that low pass speech frequency may not be declined, paragraph [0006]).

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Meijer et al.

US 20020025793 A1

Antenna diversity receiver

7. Any response to this Office Action should be **faxed to (571) 273-8300 or mailed to:**

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Hand-delivered responses should be brought to

Art Unit: 2631

Customer Service Window
Randolph Building
401 Dulany Street
Alexandria, VA 22314

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Junpeng Chen whose telephone number is (571) 270-1112. The examiner can normally be reached on Monday - Thursday, 8:00 a.m. - 5:00 p.m., EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rafael Perez-Gutierrez can be reached on 571-272-7915. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Junpeng Chen
J.C./jc

July 21, 2006

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